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(IT). **MASI, Francesco** [IT/IT]; Via Galvani, 7/0, I-26866
Sant'Angelo Lodigiano-Lodi (IT).

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(74) Agents: **DE GREGORI, Antonella** et al.; Barzano' &
Zanardo Milano S.P.A, Via Borgonuovo 10, I-20121 Milan
(IT).

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(71) Applicant (*for all designated States except US*):
POLIMERI EUROPA S.P.A. [IT/IT]; Via E. Fermi
4, I-72100 Brindisi (IT).

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(71) Applicants (*for US only*): **CASABURO, Orsola** (heiress
of the deceased inventor) [IT/IT]; Via Europa, 20, I-20097
San Donato Milanese-Milan (IT). **BIGGI, Lisa** (heiress of
the deceased inventor) [IT/IT]; Via Europa, 20, I-20097
San Donato Milanese-Milan (IT). **BIGGI, Silvia** (heiress
of the deceased inventor) [IT/IT]; Via Europa, 20, I-20097
San Donato Milanese-Milan (IT).

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(72) Inventor: **BIGGI, Aroldo** (deceased).

(72) Inventors; and

(75) Inventors/Applicants (*for US only*): **TANAGLIA,**
Tiziano [IT/IT]; Via della Battaglia 2, I- 40141 Bologna

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(54) Title: PROCESS FOR THE FUNCTIONALIZATION OF POLYOLEFINS

(57) Abstract: Process for the preparation of functionalized polyolefins, which comprises treatment under shear conditions of said polyolefins with an unsaturated monomer containing polar groups in the presence of at least one hydroperoxide as radicalic initiator. The process allows the grafting of unsaturated monomers without the formation of cross-linked polymeric material and without modifying the molecular weight distribution.

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INTERNATIONAL SEARCH REPORT

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According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the International search (name of data base and, where practical, search terms used)

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C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	FR 1 466 197 A (GRACE W R & CO) 13 January 1967 (1967-01-13) example 1 ----	1,2, 11-16, 19,20
X	GB 1 168 959 A (ALLIED CHEMICAL CORPORATION) 29 October 1969 (1969-10-29) examples ----	1,2, 11-15, 19,20
X	FR 1 494 634 A (GOODRICH CO B F) 8 September 1967 (1967-09-08) examples ----	1-3,5-7, 19,20
X	US 6 107 405 A (SCHERTZ DAVID MICHAEL ET AL) 22 August 2000 (2000-08-22) claims 1,6,7 ----- -/--	1,2

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Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Meulemans, R

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 3 166 607 A (ALBERTO BONVICINI ET AL) 19 January 1965 (1965-01-19) example 7 ----	1
X	GB 1 217 231 A (ASAHI KASEI KOGYO KABUSHIKI KAISHA) 31 December 1970 (1970-12-31) examples 4,5,8,9 ----	1,2, 11-14, 19,20
X	EP 0 392 783 A (MINNESOTA MINING & MFG) 17 October 1990 (1990-10-17) examples ----	1,2, 11-14
X	WO 98 25979 A (KIMBERLY CLARK CO) 18 June 1998 (1998-06-18) claims 1-3 -----	1,2,15, 17

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP 03/02636

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
FR 1466197	A	13-01-1967	NONE	
GB 1168959	A	29-10-1969	DE 1795027 A1 FR 1575325 A	20-01-1972 09-06-1969
FR 1494634	A	08-09-1967	DE 1595768 A1 NL 6613665 A	30-04-1970 30-03-1967
US 6107405	A	22-08-2000	AU 4977897 A WO 9817702 A1 ZA 9709143 A	15-05-1998 30-04-1998 11-05-1998
US 3166607	A	19-01-1965	BE 564910 A FR 1201501 A GB 875758 A NL 109545 C	30-12-1959 23-08-1961
GB 1217231	A	31-12-1970	DE 1720256 A1 FR 1564548 A	13-04-1972 25-04-1969
EP 0392783	A	17-10-1990	US 5013795 A AU 617047 B2 AU 5294090 A CA 2014156 A1 DE 69020039 D1 DE 69020039 T2 DK 392783 T3 EP 0392783 A2 ES 2074122 T3 HK 1006844 A1 JP 2960100 B2 JP 3054211 A US 5262484 A	07-05-1991 14-11-1991 11-10-1990 10-10-1990 20-07-1995 15-02-1996 30-10-1995 17-10-1990 01-09-1995 19-03-1999 06-10-1999 08-03-1991 16-11-1993
WO 9825979	A	18-06-1998	AU 732005 B2 AU 5897198 A EP 0948550 A1 WO 9825979 A1	12-04-2001 03-07-1998 13-10-1999 18-06-1998